

## H<sub>2</sub>S Drilling Operations Plan

- a. All personnel will be trained in H<sub>2</sub>S working conditions as required by Onshore Order 6 before drilling out of the surface casing.
- b. Two briefing areas will be established. Each will be at least 150' from the wellhead, perpendicular from one another, and easily entered and exited. See H<sub>2</sub>S page 5 for more details.
- c. H<sub>2</sub>S Safety Equipment/Systems:
  - i. Well Control Equipment
    - Flare line will be  $\geq 150'$  from the wellhead and ignited by a flare gun.
    - Beware of SO<sub>2</sub> created by flaring.
    - Choke manifold will include a remotely operated choke.
    - Mud gas separator
  - ii. Protective Equipment for Essential Personnel
    - Every person on site will be required to wear a personal H<sub>2</sub>S and SO<sub>2</sub> monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.
    - One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
    - Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
    - Four emergency escape packs will be in the doghouse for emergency evacuation.
    - Hand signals will be used when wearing protective breathing apparatus.
    - Stokes litter or stretcher
    - Two full OSHA compliant body harnesses
    - A 100 foot long x 5/8 inch OSHA compliant rope
    - One 20 pound ABC fire extinguisher
  - iii. H<sub>2</sub>S Detection & Monitoring Equipment
    - Every person on site will be required to wear a personal H<sub>2</sub>S and SO<sub>2</sub> monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.
    - A stationary detector with three sensors will be in the doghouse.

- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
  - Visual alarm will be triggered at 10 ppm.
  - Audible alarm will be triggered at 10 ppm.
  - Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.
- iv. Visual Warning System
- Color-coded H<sub>2</sub>S condition sign will be set at the entrance to the pad.
  - Color-coded condition flag will be installed to indicate current H<sub>2</sub>S conditions.
  - Two wind socks will be installed that will be visible from all sides.
- v. Mud Program
- A water based mud with a pH of  $\geq 10$  will be maintained to control corrosion, H<sub>2</sub>S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
  - Drilling mud containing H<sub>2</sub>S gas will be degassed at an optimum location for the rig configuration.
  - This gas will be piped into the flare system.
  - Enough mud additives will be on location to scavenge and/or neutralize H<sub>2</sub>S where formation pressures are unknown.
- vi. Metallurgy
- All equipment that has the potential to be exposed to H<sub>2</sub>S will be suitable for H<sub>2</sub>S service.
  - Equipment that will meet these metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head and spool, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).
- vii. Communication from well site
- Cell phones and/or two-way radios will be used to communicate from the well site.
- d. A remote controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain H<sub>2</sub>S.

Company Personnel to be Notified

Buddy Livingston, Drilling Manager

Mobile: (918) 633-3490

Or

John Maxey, Engineer

Office: (575) 623-0438

Local & County Agencies

Monument Fire Department

911 or (575) 393-4339

Hobbs Fire Marshal

(575) 391-8185

Lea County Sheriff (Lovington)

911 (575) 396-3611

Lea County Emergency Management (Lovington)

(575) 396-8602

Lea Regional Medical Center Hospital (Hobbs)

(575) 492-5000

State Agencies

NM State Police (Hobbs)

(575) 392-5588

NM Oil Conservation (Hobbs)

(575) 370-3186

NM Oil Conservation (Santa Fe)

(505) 476-3440

NM Dept. of Transportation (Roswell)

(575) 637-7201

Federal Agencies

BLM Carlsbad Field Office

(575) 234-5972

BLM Hobbs Field Station

(575) 393-3612

National Response Center

(800) 424-8802

US EPA Region 6 (Dallas)

(800) 887-6063

(214) 665-6444

Veterinarians

Dal Paso Animal Hospital (Hobbs)	(575) 397-2286
Hobbs Animal Clinic & Pet Care (Hobbs)	(575) 392-5563
Great Plains Veterinary Clinic & Hospital (Hobbs)	(575) 392-5513

Residents within 2 miles

There are no residents within 2 miles.

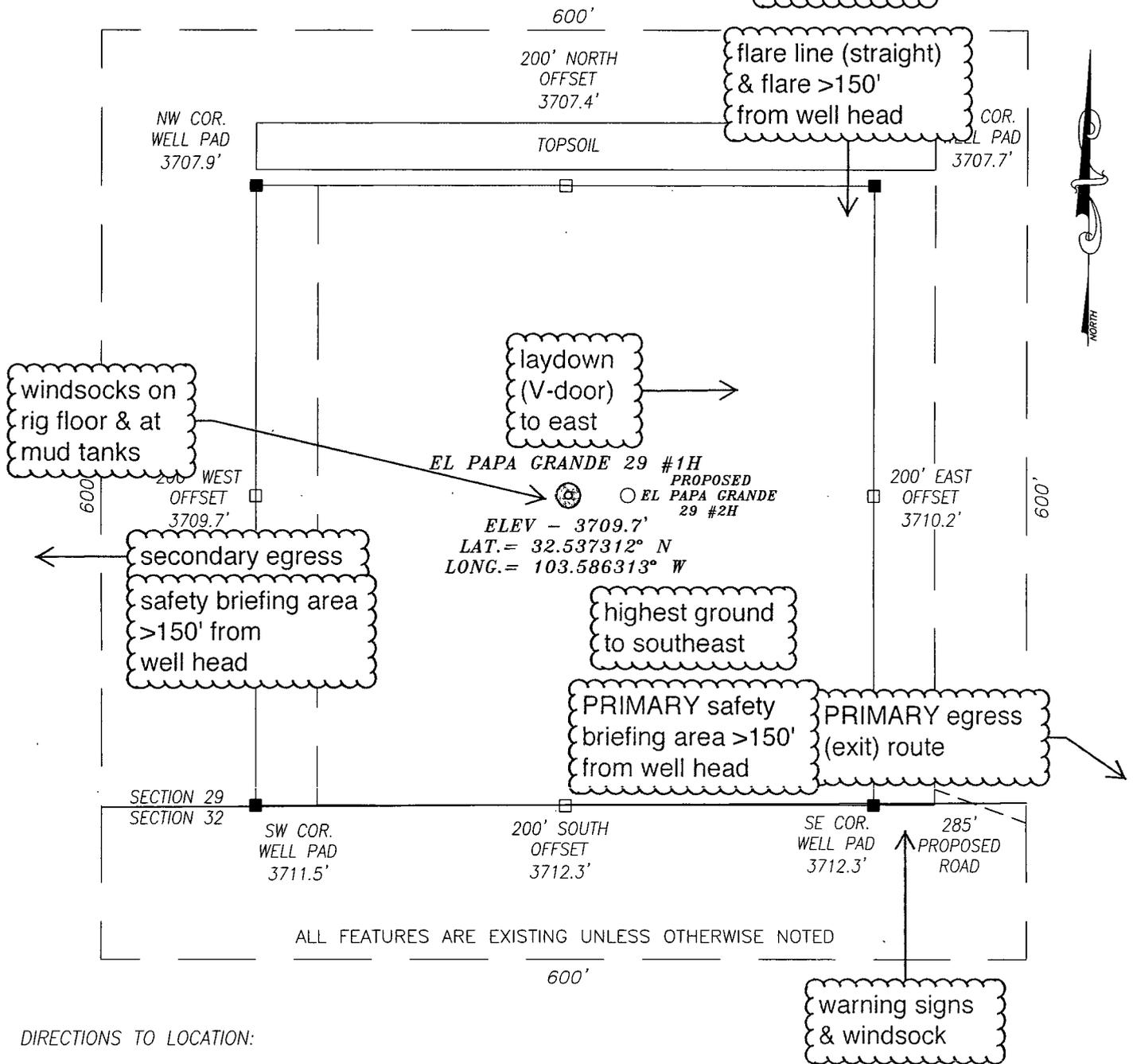
Air Evacuation

Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

SECTION 29, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M.,

LEA COUNTY

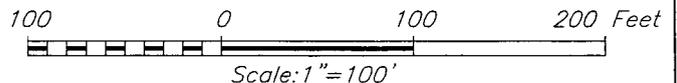
H2S PAGE 5 NEW MEXICO



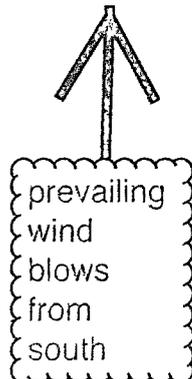
ALL FEATURES ARE EXISTING UNLESS OTHERWISE NOTED

DIRECTIONS TO LOCATION:

HEADING EAST ON HWY 176 TURN LEFT (NORTH) APPROX. 0.1 MILE PAST MILE MARKER 9 ONTO A CALICHE ROAD AND GO APPROX. 1.0 MILE; THEN TURN LEFT (WEST) AND GO APPROX. 300 FEET TO EXISTING GOOSE ST. #1H WELL PAD; GO TO NORTHWEST PAD CORNER THEN PROPOSED WELL IS APPROX. 580 FEET NORTHWEST.



**HARCROW SURVEYING, LLC**  
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 chad\_harcrow77@yahoo.com



<b>DIAMONDBACK RESOURCES, LLC</b>		
EL PAPA GRANDE 29 #1H WELL LOCATED 200 FEET FROM THE SOUTH LINE AND 1300 FEET FROM THE WEST LINE OF SECTION 29, TOWNSHIP 20 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO		
SURVEY DATE: 08/06/2013	PAGE: 1 OF 1	
DRAFTING DATE: 08/07/2013		
APPROVED BY: CH	DRAWN BY: TL	FILE: 13-516

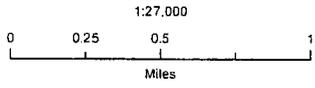


# Diamondback Resources, LLC

## El Papa Grande 29 #1H H<sub>2</sub>S Contingency Plan: 2 Mile Radius Map

Section 29, Township 20S, Range 34E  
Lea County, New Mexico

⊙ El Papa Grande 29 #1H



NAD 1927 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., January 10, 2014  
for Diamondback Resources, LLC

